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EXAMINER
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/769,240  
Filing Date: January 30, 2004  
Appellant(s): LIN ET AL.

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Manisha Chakrabarti  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/01/2008 appealing from the Office action mailed 07/30/2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

Patent number: 6,847,714 B1	Das et al.	01-2005
Patent number: 6,798,876 B1	Bala, Srinivas	09-2004
Patent number: 4,896,358	Bahler et al.	01-1990
Patent number: 6,122,361	Gupta, Vishwa	09-2000
Non-patent Documents	Mitsa	05-1998

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. **Claims 1-15, 22, and 24**, are rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1; hereinafter Das)** in view of **Bala (US Patent # 6,798,876 B1)**.

Consider **claims 1, 22, and 24**, **Das** clearly shows and discloses a method, a system, and a computer-usable medium embodying computer program code for performing operator selection comprising: initiating a dialog between a contact and a call handling system (speech sample) (col. 2, lines 55-58; and fig1, label 300); identifying a language variation spoken by the contact (identifying a language variation of the contact's speech sample) (col. 2, lines 59-62; and fig. 2, label 304); determining a skill level with respect to the language variation for each operator within a set of operators (col. 4, lines 3-13, col. 3, lines 14-20; and fig. 2, labels: 306, 308) following the initiation of the dialog between the contact and the call handling system (col. 3, lines 51-64; and fig. 2, labels: 300, 308); selecting an operator whose skill level in the

Art Unit: 2614

language variation is above a predetermined value (fig. 4, labels: 410, 414); and transferring the dialog with the contact to the operator (col. 3, lines 25-31; and col.2, lines 17-20); however, **Das** does not specifically disclose that the skill level for each operator within the set of operators being determined on a real time basis while each operator is engaged in a dialog with a contact that has been transferred to that operator .

In the same field of endeavor, **Bala** clearly discloses that the skill level for each operator within the set of operators being determined on a real time basis while each operator is engaged in a dialog with a contact that has been transferred to that operator (col. 6, lines 15-18)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to automatically updating operator profiles with information regarding both the caller and operator during the call as taught by Bala in Das et al, in order to achieve the best result for ranking the operator that can best meet the caller's need.

Consider **claims 5, 6, 7, and 8, Das and Bala** clearly show that selecting includes: selecting an operator with a highest skill level in the language variation (**Das**: col. 3, line 15-19); queuing the contact with a soon to be available operator with a highest skill level in the language variation (**Das**: col. 3, line 57-64); selecting an operator whose second language is equal to the language variation of the contact; selecting an operator whose cultural background is associated with the language variation of the contact (**Das**: col. 3, line 18-22).

Consider **claim 12, Das and Bala** clearly show that initiating includes: initiating dialog between the contact and an interactive voice response interface (**Das**: col. 1, line 44-46).

Consider **claims 13 and 14, Das and Bala** clearly show that the language variation is an accent variation; and the language variation is a dialect variation (**Das**: col. 1, line 58-62; col. 3, line 35-39; col. 8, claim 19).

Consider **claim 15, Das and Bala** clearly show that identifying includes; retrieving the contact's language variation from a contact database (**Das**: col. 6, line 26-27).

Consider **claim 2, Das and Bala** clearly show the method, wherein determining includes: the following: receiving a self rating from an operator regarding how difficult a dialog was with a contact who speaks the language variation; and updating the skill level of the operator using the self rating (**Bala**: col. 3, lines 25-28).

Consider **claim 3, Das and Bala** clearly show the method, wherein determining includes defining a set of dialog key words indicating communication difficulties; rating an operator based on how many of the key words the operator spoke in a dialog with a contact who speaks the language variation (**Bala**: col. 3, lines 53-57); and updating the skill level of the operator using the rating (**Bala**: col. 8, lines 4-7).

Consider **claim 4, Das and Bala** clearly show the method, wherein determining includes measuring a time an operator spent engaged in a dialog with a contact who speaks the language variation (**Bala**: col. 7, lines 10-11); counting a number of words spoken during the dialog with the contact who speaks the language variation; rating the operator based on the time spent and number of words spoken; and updating the skill level of the operator using the rating (**Bala**: col. 8, lines 27-33 ).

Consider **claim 9, Das and Bala** clearly show the method, further comprising: generating a report on all language variations spoken by contacts calling the call handling system (**Bala**: col. 8, lines 16-20);

Consider **claim 10, Das and Bala** clearly show the method, further comprising: generating a report on operator skill levels with respect to a predefined set of language variations (**Bala**: col. 8, lines 25-30).

Consider **claim 11, Das and Bala** clearly show the method, further comprising: generating a report on disparities between a number of contacts calling the call handling system and speaking a particular language variation and operators skilled in the particular language variation (**Bala**: col. 4, lines 50-64).

2. **Claims 16, 18, 20, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1; hereinafter Das)** in view of **Bala (US Patent # 6,798,876 B1)** and further in view of **Bahler et al (US Patent # 4,896,358; hereinafter Bahler)**.

As per claims 16, 18, 20, and 23, **Das and Bala** show the language and the accent of a contact is automatically determined from a speech sample of the party, and based on the accent the call is sent for servicing to a call-center agent (operator) who skilled in the determined accent.

However, **Das and Bala** do not specifically disclose that determining includes the following: generating a set of confidence scores indicating a likelihood that the contact speaks each language variation within a set of language variations; generating an inverse distance weighted confidence score for each of the language variations using the confidence score and an inversely weighted distance between the contact and each language variation; and associating a language variation with the contact if that language variation's inverse distance weighted confidence score is above a predetermined value (a highest variation's inverse distance weighted confidence score with the contact).

In the same field of endeavor, **Bahler** clearly discloses generating a score that indicates the likelihood for determining whether the speech contains a valid phrase or keyword as compared to an undesirable utterance (abstract, line 7-10); **Bahler** also discloses that the

weighted distance is between the segment of speech under consideration (the contact) and a keyword template (language variation) (col. 7, line 3-27); comparing set of signals (contact) with keyword templates (language variation) and selecting the keyword template having the greatest statistical similarity set of signals (col. 7, line 45-48), Bahler discloses the above steps for the purpose of explaining the method of identifying the language and accent variation.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include and explain the method for recognize language variation as taught by Bahler in Das and Bala, in order to improve the technique of identifying language and accent variation.

3. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1; hereinafter Das)** in view of **Bala (US Patent # 6,798,876 B1)**, further in view of **Bahler et al (US Patent # 4,896,358; hereinafter Bahler )** and further more in view of **Mitsa** (IEEE Instrumentation)

**Das, Bala, and Bahler** disclose the claimed invention above but lack teaching of the details for calculating the inverse distance weighted confidence score.

However, **Mitsa** discloses the calculation details for getting the value of inverse distance weighted confidence score for the purpose of simplify the calculation when the data points is large such as language variation and images; **Mitsa** clearly shows generating inverse distance weighted method in formula as in equation (2) which shows selecting a first point (a first language variation) as a first origin; calculating a distance between the first origin and each other points (other language variation); normalizing these distances with respect to the first origin; multiplying each normalized distance by its respective confidence score to generate a set of multiplied results; totaling the multiplied results to yield an inverse-distance weighted confidence score for the first point (the first language variation);



Art Unit: 2614

selecting a second point (a second language variation) as a second origin; and repeating the selecting, calculating, normalizing, multiplying, and totaling for the second origin as  $l$  points (language variation) in the equation (2) takes the variable from 1 through  $n$ . (Page 453)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the method of calculating the inverse distance weighted as taught by Mitsa in Das and Bahler, in order to achieve the one advantage of inverse distance weighted methods which is large number of variations available and be easily modified to meet the specific needs for using this method in language and accent variation.

4. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1; hereinafter Das)** in view of **Bala (US Patent # 6,798,876 B1)**, further in view **Bahler et al (US Patent # 4,896,358; hereinafter Bahler)** and further more in view of **Gupta (US Patent # 6,122,361)**

**Das**, **Bala**, and **Bahler** disclose the claimed invention above but lack specifying the geographical location (physical distance) as a distance that is relate to the user (contact) location.

However, **Gupta** discloses means for consider a geographical location of the user as a distance for the purpose of getting valuable information that can be used as in conjunction with acoustical match between the spoken utterance and orthographies in the speech recognition (col. 2, lines 55-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the geographical distance as taught by Gupta in Das, Bala, and Bahler, in order to improve the accuracy of the speech recognition.

Art Unit: 2614

5. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1; hereinafter Das)** in view of **Bala (US Patent # 6,798,876 B1)**, and further in view of **Bahler et al (US Patent # 4,896,358; hereinafter Bahler)**.

Claim 21 has the same limitations as claims 1 and 16; therefore, claim 21 is rejected for the same reasons set for claims 1 and 16.

### **(10) Response to Argument**

Appellant's arguments with respect to claims 1- 24 have been fully considered but they are not persuasive.

#### **Claims 1-15, 22, and 24**

On pages 7-11 of the Appeal Brief, Appellant argues regarding claims 1, 22, and 24 that column 6, lines 15 – 18, of the Bala disclosure specifically states "automatically updating, at the completion of the call, the caller profile and the highest ranked customer service profile with information regarding the success of the call." Furthermore, Appellant argues "while the Bala system monitors call data during the actual call, the Bala system does not actually update the customer service representative profile until after the completion of the call. Claims 1, 22, and 24, on the other hand, recite making a determination of the skill level for each operator on a real time basis while each operator is engaged in a dialog with the contact." The Examiner respectfully disagrees with the appellant's arguments for the following reasons:

Appellant argues on page 11 of the Appeal Brief that "Bala system does not actually update the customer service representative profile until after the completion of

Art Unit: 2614

the call.” The claims 1, 22, and 24 recite “... the skill level for each operator within a set of operators being determined on a real time basis while each operator is engaged in a dialog with a contact that has been transferred to that operator” [Emphasis added]. The claims do not recite that the skill level for each operator within a set of operators being updated on a real time basis while each operator is engaged in a dialog with a contact.

Therefore, the appellant is arguing a feature that is not recited in the claims since the word “determine” and the word “update” are not the same. Furthermore, Bala clearly teaches that the system monitors the call data during the actual call and determines if the call was successful or not; then the system updates, at the completion of the call, the highest ranked customer service representative profile with information regarding the success of the call (col. 4, lines 66-67; col. 5, lines 1-3; and col. 6, lines 15-18).

“Monitoring the call data during the actual call” is read as “determining the skill level for each operator on real time basis while each operator is engaged in a dialog with a contact that has been transferred to that operator,” since, in Bala system, the skill level for the operator is determined by monitoring the call data that show information regarding the success of the call. Therefore, given the broadest reasonable interpretation, the teaching of Das and Bala clearly reads on the limitation as claimed.

Claims 2-15 are dependent from independent claim 1, and are rejected for the same reasons set for claim 1.

**Claims 16-21, and 23**

On pages 11-17 of the Appeal Brief, Appellant argues regarding claims 16-21, and 23 that column 6, lines 15 – 18, of the Bala disclosure specifically states "automatically updating, at the completion of the call, the caller profile and the highest ranked customer service profile with information regarding the success of the call." Furthermore, Appellant argues "while the Bala system monitors call data during the actual call, the Bala system does not actually update the customer service representative profile until after the completion of the call. Claims 16-21 and 23, on the other hand, recite making a determination of the skill level for each operator on a real time basis while each operator is engaged in a dialog with the contact." The Examiner respectfully disagrees with the appellant argument for the following reasons:

Appellant argues on page 16 of the Appeal Brief that "Bala system does not actually update the customer service representative profile until after the completion of the call." Claims 16 - 21 and 23 recite "the skill level for each operator within a set of operators being determined on a real time basis while each operator is engaged in a dialog with a contact that has been transferred to that operator" [Emphasis added]. The claims do not state that the skill level for each operator within a set of operators being updated on a real time basis while each operator is engaged in a dialog with a contact. Therefore, the appellant is arguing a feature that is not recited in the claims since the word "determine" and the word "update" are not the same. Furthermore, Bala clearly teaches that the system monitors the call data during the actual call and determines if the call was successful or not; then the system updates, at the completion of the call,

Art Unit: 2614

the highest ranked customer service representative profile with information regarding the success of the call (col. 4, lines 66-67; col. 5, lines 1-3; and col. 6, lines 15-18).

“Monitoring the call data during the actual call” is read as “determining the skill level for each operator on real time basis while each operator is engaged in a dialog with a contact that has been transferred to that operator,” since, in Bala system, the skill level for the operator is determined by monitoring the call data that show information regarding the success of the call. Therefore, given the broadest reasonable interpretation, the teaching of Das and Bala clearly reads on the limitation as claimed.

Claims 16-20 depend from independent claim 1, and are rejected for the same reasons set for claim 1.

Claim 23 depend from independent claim 22, and are rejected for the same reasons set for claim 22.

### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Amal Zenati/

February 19, 2009

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